Surface Areas and Volumes

Question 1.
If a spherical balloon grows to twice its radius when inflated, then the ratio of the volume of the inflated balloon to the original balloon is
(a) it is 8 : 1
(b) it is 4 : 1
(c) it is 5 : 1
(d) it is 6 : 1

Answer: (a) it is 8 : 1

Question 2.
The length of the longest rod that can fit in a cubical vessel of side 10 cm, is
(a) 10 cm
(b) $10\sqrt{2}$ cm
(c) $10\sqrt{3}$ cm
(d) 20 cm

Answer: (c) $10\sqrt{3}$ cm

Question 3.
A right circular cone has an altitude of 40 cm and a diameter of 60 cm. The slant height of the cone is
(a) 25 cm
(b) 100 cm
(c) 75 cm
(d) 50 cm

Answer: (d) 50 cm

Question 4.
If the diameter of the base of a cylindrical pillar is 4 m and its height is 21 m, then the cost of

construction of the pillar at Rs. 1.50 per cubic metre is:
(a) Rs. 396
(b) Rs. 400
(c) Rs. 410
(d) Rs. 420

Answer: (a) Rs. 396

Question 5.
The height of a right circular cone of radius 5 cm and slant height 13 cm is
(a) 8 cm
(b) 14 cm
(c) 6 cm
(d) 12 cm

Answer: (d) 12 cm

Question 6.
The curved surface area of a right circular cone whose slant height is 14 cm and base radius is 21 cm is
(a) 308 cm^2
(b) 924 cm^2
(c) 232 cm^2
(d) 446 cm^2

Answer: (b) 924 cm^2

Question 7.
The perimeter of one face of a cube is 40 cm. The volume of the cube (in cm^3) is :
(a) 1600
(b) 1000
(c) 800
(d) 160

Answer: (b) 1000

Question 8.
The volume of the cylinder whose height is 14 cm and diameter of base 4 cm is:

(a) 176 cm^3
(b) 196 cm^3
(c) 276 cm^3
(d) 352 cm^3

Answer: (a) 176 cm^3

Question 9.
A beam 9 m long, 40 cm wide and 20 cm deep is made up of iron which weighs 50 kg per cubic metre. The weight of the beam is :
(a) 27 kg
(b) 36 kg
(c) 48 kg
(d) 56 kg

Answer: (b) 36 kg

Question 10.
The area surrounded by a conical tent is 4526 m^2. If the cost of canvas is Rs. 17 per square meter, then find the total cost of canvas.
(a) ₹52100
(b) ₹76942
(c) ₹65000
(d) ₹85246

Answer: (b) ₹76942

Question 11.
The surface area of cuboid-shaped box having length=80 cm, breadth=40cm and height=20cm is:
(a) 11200 sq.cm
(b) 13000 sq.cm
(c) 13400 sq.cm
(d) 12000 sq.cm

Answer: (a) 11200 sq.cm

Question 12.
The volume of a sphere is 38808 cu.cm. The curved surface area of the sphere (in cm^2) is :

(a) 5544
(b) 1386
(c) 8316
(d) 4158

Answer: (a) 5544

Question 13.
The height of a right circular cone of radius 3.5 cm and volume 77 cm^3 is
(a) 9 cm
(b) 11 cm
(c) 4 cm
(d) 6 cm

Answer: (d) 6 cm

Question 14.
he ratio of the radii of two spheres whose volumes are in the ratio 64 : 27 is
(a) it is 8 : 3.
(b) it is 16 : 9.
(c) it is 10 : 7.
(d) it is 4 : 3.

Answer: (d) it is 4 : 3.

Question 15.
If the diameter of a cylinder is 28 cm and its height is 20 cm, then total surface area (in cm^2) is :
(a) 2993
(b) 2992
(c) 2292
(d) 2229

Answer: (b) 2992

Question 16.
The radius of two similar right circular cones are 2 cm and 6 cm. The ratio of their volumes is
(a) 1 : 3
(b) 1 : 9
(c) 9 : 1
(d) 1 : 27

Answer: (d) 1 : 27

Question 17.
A rectangular sand box is 5 m wide and 2 m long. How many cubic metres of sand are needed to fill the box upto a depth of 10 cm ?
(a) 1
(b) 10
(c) 100
(d) 1000

Answer: (a) 1

Question 18.
The cost of cementing the inner curved surface of a 14 m deep well of radius 2 m at the rate of □2 per m^2 is
(a) ₹352.
(b) ₹176.
(c) ₹56.
(d) ₹112.

Answer: (a) ₹352.

Question 19.
The slant height of a cone with radius 15 cm and height 20 cm is
(a) 21 cm
(b) 20 cm
(c) 25 cm
(d) 15 cm

Answer: (c) 25 cm

Question 20.
A hemispherical bowl is made of steel 0.25 cm thick. If the inner radius of the bowl is 3.25 cm, then the outer curved surface area of the bowl is
(a) 154 cm^2.
(b) 77 cm^2.
(c) 115.5 cm^2.
(d) 38.5 cm^2.

Answer: (b) 77 cm^2.

Question 21.
A conical tent is 15 m high and the radius of its base is 20 m. The cost of the canvas required to make the tent at the rate of ₹7 per m^2 is
(a) ₹10000
(b) ₹12000
(c) ₹11000
(d) ₹9000

Answer: (c) ₹11000

Question 22.
The curved surface area of a right circular cylinder of height 14 cm is 88 cm^2. The diameter of the base is:
(a) 2 cm
(b) 3 cm
(c) 4 cm
(d) 6 cm

Answer: (a) 2 cm
